

40mm Industry Day III

May 19, 2004



**American
Ordnance**



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Ordnance**

40mm Industry Day III

- **AO's Duties as Directed Source**

- ▮ **What is LAP - SOW**
- ▮ **What is not included in the LAP SOW**
- ▮ **RFP Timeline**
- ▮ **Support Services Available for Purchase from AO**

AO MILAN 40MM

AO Directed LAP Source Responsibilities

AO's Duties As A Directed Source Include

- **Protection of customer confidential information and pricing**
- **Firewall to protect proprietary information from competitors**
- **All customers will receive equal treatment**
- **Fairness in pricing**

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40mm LAP Scope Of Work For AO Milan, MLAAP

Production

- 1. Perform Program Management & initial quality planning**
- 2. Quote & negotiate contracts/orders for RFP's received based on TDPL**
- 3. Perform contract administration function**
- 4. Perform production safety support function**
- 5. Perform production environmental compliance function**
- 6. BATF Licensing and controls for AO**
- 7. Establish configuration base line for each order and perform change control during execution**
- 8. Plan requirements and buy AO procured materials**
- 9. Perform supplier quality function for AO procured materials**
- 10. Receive & inspect incoming materials**

40mm LAP Scope Of Work For AO Milan, MLAAP

Production (cont'd)

- 11. Perform incoming quality sampling for AO procured materials**
- 12. Store and manage inventory for incoming materials**
- 13. Transport & deliver materials to production lines**
- 14. Obtain AIE approval for inspection equipment**
- 15. Design/Procure/Build tooling and production equipment**
- 16. Write operating procedures for ammunition work**
- 17. Make process modifications to support TDPL's quoted**
- 18. Perform production scheduling function**
- 19. Perform lot planning function**
- 20. Perform Quality Engineering support function**

40mm LAP Scope Of Work For AO Milan, MLAAP

Production (cont'd)

- 21. Perform Process/Production Engineering support function**
- 22. Perform machine shop support function**
- 23. Perform process/production startup readiness activities**
- 24. Perform production Quality Control function**
- 25. Perform Production Maintenance support function**
- 26. Produce 1st article if quoted (including testing)**
- 27. Produce contract qty's to quality requirements and delivery schedules negotiated**
- 28. Perform radiological (X-ray) support function**
- 29. Perform Metrology function**
- 30. Perform chemistry lab support function**

40mm LAP Scope Of Work For AO Milan, MLAAP

Production (cont'd)

- 31. Perform lot ballistic acceptance testing**
- 32. Prepare ammo data cards, input into Army electronic data base, submit to local QAR for approval**
- 33. Maintain lot history records/files**
- 34. Submit ammo data card to customer (customer prepares and submits dd-250)**
- 35. Package completed ammunition to TDPL requirements**
- 36. Transport completed ammunition to storage**
- 37. Perform surveillance on stored ammunition**
- 38. Transport ammunition to loading area for shipment**
- 39. Perform PC&H for out shipment**
- 40. Perform transportation inspections**

40mm LAP Scope Of Work For AO Milan, MLAAP

Production (cont'd)

- 41. Complete explosive transport paperwork/certifications**
- 42. Coordinate & schedule transportation for explosive shipments**
- 43. Coordinate & schedule transportation for non-explosive shipments**

40mm LAP Scope Of Work For AO Milan, MLAAP

Plant Support Included in LAP price

- 1. Perform plant protection/security function**
- 2. Perform plant fire protection function**
- 3. Operate plant utility systems
(water,sewer,electric,steam**
- 4. Perform site wide facility maintenance support
function**
- 5. Perform site wide environmental compliance function**

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Activities Not Included In LAP Price

- **Special Testing For Problem Resolution For Customer Supplied Materials**
- ▮ **Special Inspections For Problem Resolution For Customer Supplied Materials**
- ▮ **Support To Design Agencies For Problem Resolution For Customer Supplied Materials**
- ▮ **Support To Design Agencies For Special Tests and Development Work**
- ▮ **Support For Special Testing and Investigations For Malfunctions In The Field**
- ▮ **Demiliterization of 40mm Ctgs**
- ▮ **Planning, PC&H, containerization, document preparation for shipment OCONUS**
- ▮ **Disposal Of Residual Systems Contractor Furnished Material**
- ▮ **Performance Oriented Packaging Certification Services**
- ▮ **Cost of LAP shutdown result of customer furnished materials**

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RFP Timeline

- **RFP Release Anticipated By September 1, 2004**
- ▮ **Due date 60 days following release, approximately Oct. 29**
- ▮ **AO is anticipating many requests for LAP SOW quotes**
- ▮ **Requests for quote must be received by AO no later than Oct. 1**
- ▮ **It is important that interested companies start planning now to ensure a quality proposal can be produced**
- ▮ **AO will be able to best serve your interests if communications are ongoing between now and September**
- ▮ **We encourage you to contact us to set a meeting time to discuss and begin planning the proposal process**

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Support Services Available for Purchase From AO

- 1. Configuration Management**
- 2. Program & Contract Management**
- 3. Process & Product Quality Systems**
- 4. Lean & 6 Sigma Program Development, Training and Project Management**
- 5. Supplier Quality Management and Development**
- 6. Purchasing and Supply Chain Management**
- 7. Testing and Evaluation**
- 8. OCONUS And Other Special Shipments**
- 9. Special Energetics Materials and end Item Storage and Surveillance**
- 10. R&D And Special Tests For New Designs Including Energetic Materials Pressing, Pouring and Extruding For HE and IM Formulations**
- 11. Obtain Hazard Classifications For New or Changed Items**



AO Milan 40MM

**Manufacturing
Support
Capabilities**



J. Fine & J. Solgaard
January 28, 2004



Systems Integration Support Infrastructure

- **In addition to providing 40mm Grenade LAP services as a directed source, AO will be offering to provide system integration services to the successful prime contract bidders.**
 - **AO procures between \$25 - \$30 million of BOM and support materials annually.**
 - **AO tenders over 500 quotes annually for government and international orders**
 - **AO manages programs totaling \$150 million annually consisting of approximately 100 individual orders/contracts including U.S. Government and international orders**
 - **AO has the experienced personnel and business infrastructure in place to provide these services to**

Systems Integration Support Infrastructure

- **PROGRAM MANAGEMENT & CONTRACT MANAGEMENT**
- **PROCESS & PRODUCT QUALITY SYSTEMS**
- **LEAN MFG. & 6 SIGMA CONTINUOUS IMPROVEMENT**
- **PRODUCT & PROCESS ENGINEERING & DEVELOPMENT**
- **SUPPLIER QUALITY & DEVELOPMENT**
- **PURCHASING & SUPPLY CHAIN MANAGEMENT**
- **CONFIGURATION MANAGEMENT**
- **TESTING AND EVALUATION**

AO MILAN PROCESS & PRODUCT QUALITY

➤ AO QUALITY PROGRAM

- ISO 9001 - 2000 Certified Quality System**
- Product Accepted Per MIL-STD-1916 Inspection Plan**
- Statistical Process Control**
 - Approved General SPC Plan & Item Detailed SPC Plans**
 - SPC Requirements Flowed to Suppliers**
 - Certified Inspection and NDT Personnel & Training Resources**
 - Dedicated Quality Engineering Resources**

➤ PROCESS RELIABILITY EXCEEDS 1 PPM DEFECTIVE

➤ RELIABILITY AND STATISTICAL SOFTWARE PROGRAMS

PRODUCT & PROCESS ENGINEERING & DEVELOPMENT

➤ CUSTOMER TEAMING - 40MM PRODUCT IMPROVEMENT

- Cooperative Research & Development Agreement (CRADA) with ARDEC**
- M433 Case To Projectile Sealing Improvement**
- M433 Propellant Loading Specification Enhancements**
- High Velocity Family Propellant Replacement**
- M430A1 Dud Reducing Fuze**
- M430A1 Performance Improvement (velocity std dev., dispersion)**
- M430A1 IM Loading Project**
- Teaming in development of new 40MM rounds**
 - Low cost HV training**
 - Low velocity flechette & thermobaric**
 - Low velocity non-lethal**

SUPPLIER QUALITY & DEVELOPMENT

➤ Effective Supplier Quality and Development Program

- Supplier Certification, Reward and Recognition Program**
- Supplier Data Base with Feedback and Report Card System To Track Performance**
- Certified Supplier List for 40mm Product Family Components**
- Resources Dedicated to Supplier Development**
- Lean Sigma Projects With Suppliers**

• Development and Training Available for

PRODUCT & PROCESS ENGINEERING

- **EQUIPMENT SPECIFICATION THRU PROVE-OUT**
- **START-UP PLANNING AND ASSISTANCE**
- **INDUSTRIAL ENGINEERING STUDIES**
- **MECHANICAL ENGINEERING AND MISTAKE PROOFING**
- **PROCESS ENGINEERING USING LEAN SIGMA TECHNIQUES**
- **OVER 50 YEARS EXPERIENCE IN PROCESS IMPROVEMENTS AND DATA COLLECTION EXPERTISE**

PURCHASING & SUPPLY CHAIN MANAGEMENT

- **Mature and Effective Supply Chain Management Program**
 - **Established U.S. Sources for all 40MM Components**
 - **Data Base for Suppliers and Supplier Performance**
 - **AO is Production Integrator For Commercial 40MM Sales**
 - **Supplier Certification Program in Place**
- **Over 50 Years' Experience in DOD, Commercial and International Purchasing**
- **ERP System for planning and delivery**

assurance

PROGRAM MANAGEMENT

- **CRADLE TO GRAVE PROGRAM/PROJECT MANAGEMENT**
- **ISO CERTIFIED ADVANCED QUALITY PLANNING SYSTEM**
- **50 YEARS PLUS PM EXPERIENCE**
- **PROJECT MANAGEMENT TOOLS & SOFTWARE**
- **PROJECT/PROGRAM INTEGRATION**
- **INTERNATIONAL PROJECT MANAGEMENT EXPERIENCE**

CONTRACT MANAGEMENT

- **LIFE OF CONTRACT- CONTRACT MANAGEMENT**
- **ISO CERTIFIED CONTRACT REVIEW & CLOSE OUT SYSTEM**
- **50 YEARS PLUS CONTRACTING EXPERIENCE**
- **CM TOOLS & SOFTWARE**
- **CONTRACT NEGOTIATION & PROJECT/PROGRAM INTEGRATION**
- **INTERNATIONAL CONTRACT MANAGEMENT EXPERIENCE**
- **CRITICAL DEFECT & WARRANTY CLAUSE SPECIALISTS**

CONFIGURATION MANAGEMENT

- **ISO CERTIFIED DOCUMENT CONTROL SYSTEM**
- **DRAWING, CHANGE CONTROL & TDP MANAGEMENT SYSTEM**
- **50 YEARS PLUS CONFIGURATION MGMT. EXPERIENCE**
- **CM TOOLS & SOFTWARE**
- **CONFIGURATION REVIEW WITH PROJECT/PROGRAM INTEGRATION**
- **INTERNATIONAL CONFIGURATION MANAGEMENT EXPERIENCE**

TESTING & EVALUATION

- **NON DESTRUCTIVE TESTING FACILITIES**
- **OVER 50 YEARS'S EXPERIENCE IN NDT - X-RAY AND ULTRASONIC EXPERIENCE**
- **LEVEL III CERTIFIED NDT SPECIALISTS**
- **DIGITAL X-RAY IN USE**
- **RADAR TEST RANGE FOR ALL 40MM PRODUCTS**
- **DATA COLLECTION AVAILABLE AT TEST RANGE**

LEAN & 6 SIGMA CONTINUOUS IMPROVEMENT

- **Lean Manufacturing Program in 4th Year of Maturity**
 - **Lean System Implemented for All Products**
 - **Mistake Proofing Practices Applied to All Processes**

- **6 Sigma Quality Program In 3rd Year of Maturity**
 - **Continuous Improvement BB/GB Projects Across All Products**
 - **35 Projects Targeted Across AO for 2003-70% Complete**
 - **8 Six Sigma Black Belts and 35 Six Sigma Green Belts Working Projects**
 - **DMAIC Process- DOEs & FMEAs To Develop Best**

PROCESS INVESTMENT

- **Millions of Dollars Invested in 40MM Process Improvements**
- **Emphasis On Improving Safety and Quality While Lowering Cost**
- **Projects implemented include:**
 - **High Reliability Automated Inspection Systems**
 - **Vision Systems**
 - **Lasers Inspection Systems**
 - **Closed Loop PLC Controls**
 - **Improved Product Marking Systems**
 - **Environmentally Controlled Manufacturing Areas**

MLAAP 40MM CAPABILITY SUMMARY

➤ QUANTITIES PRODUCED BY AO AT MLAAP PAST 3 YEARS

- M430 HEDP HV - 3 million +
- M918 TP HV - 6 million +
- M385 TP HV - 1 million +
- M433 HEDP LV- 200,000



PROCESS CAPABILITY AND INSPECTION RELIABILITY

**YIELDING DELIVERED PRODUCT WITH LESS
THAN**

1 DEFECT PER 2 MILLION ROUNDS DELIVERED